

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte LARRY L. BRADFORD,  
EMANUEL PINZONI,  
BARBARA A. WILLIAMS  
and THEODORE HALCHAK

Appeal No. 2003-0363  
Application No. 09/392,434

ON BRIEF

Before KRATZ, PAWLIKOWSKI, and MOORE, Administrative Patent Judges.  
KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-3, 5-11, 13 and 14, which are all of the claims pending in this application.

BACKGROUND

Appellants' invention relates to a polyurethane foam including a flame retardant blend. The blend includes a non-oligomeric, non-halogenated phosphate ester that contains alkyl groups and an oligomeric, non-halogenated organophosphorus flame retardant material. An understanding of the invention can be

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derived from a reading of exemplary claim 1, which is reproduced below.

1. A polyurethane foam that contains an effective amount for flame retardancy of a flame retardant blend consisting essentially of: (a) a non-oligomeric, non-halogenated, alkyl group-containing phosphate ester flame retardant; and (b) an oligomeric, non-halogenated organophosphorus flame retardant having a phosphorus content of no less than 10%, by weight, and at least three phosphorus atom-containing units therein.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Fearing (Fearing '534)	4,199,534	Apr. 22, 1980
Fearing (Fearing '633)	4,268,633	May 19, 1981
Hardy et al. (Hardy '042)	4,382,042	May 03, 1983
Hardy et al. (Hardy '035)	4,458,035	Jul. 03, 1984
Keppeler et al. (Keppeler)	5,981,612	Nov. 09, 1999 (filed Oct. 29, 1997)
Sicken et al. (Sicken)	5,985,965	Nov. 16, 1999 (filed Feb. 11, 1997)

Claims 1-3, 5-7, 9-11 and 13 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sicken, Fearing '534 or Fearing '633, each further in view of Keppeler. Claims 7, 8, 13 and 14 stand rejected under 35 U.S.C. § 103 as being unpatentable over Sicken, Fearing '534 or Fearing '633, each further in view of Keppeler and Hardy '042 or Hardy '035.

We refer to appellants' briefs and the examiner's answer and final rejection for a complete exposition of the opposing viewpoints of appellants and the examiner.

OPINION

We have reviewed appellants' arguments for patentability and the evidence of record. However, we find ourselves in agreement with the examiner's determination that the applied prior art renders the claimed subject matter prima facie obvious in accordance with the provisions of 35 U.S.C. § 103 substantially for the reasons set forth in the answer.

Moreover, we agree with the examiner's conclusion that appellants' arguments are insufficient to rebut the prima facie case of obviousness made out by the evidence relied upon by the examiner. Consequently, we shall sustain the examiner's rejections for essentially those reasons expressed in the examiner's answer, and we add the following primarily for emphasis.

Starting with the examiner's § 103 rejection of claims 1-3, 5-7, 9-11 and 13, we note that appellants have not separately argued the patentability of each claim. Accordingly, we select claim 1 as the representative claim on which we shall decide this appeal as to that ground of rejection. 37 CFR § 1.192(c)(7) and (c)(8) (2001). See In re McDaniel, 293 F.3d 1379, 1383, 63 USPQ2d 1462, 1465 (Fed. Cir. 2002) ("if the brief fails to meet either requirement, the Board is free to select a single claim

from each group of claims subject to a common ground of rejection as representative of all claims in that group and to decide the appeal of that rejection based solely on the selected representative claim").

Appellants do not dispute the examiner's determination (answer, page 4) that Sicken and either of the applied Fearing patents each teach or suggest a polyurethane foam that includes a flame retardant blend of an oligomeric flame retardant as called for in representative claim 1 and an additional flame retardant. Nor do appellants dispute the examiner's determination that Keppeler discloses that a non-oligomeric, non-halogenated phosphate ester is an available flame retardant for polyurethane foams. Nor do appellants urge that combination of one of the non-halogenated, non-oligomeric ester compounds such as triethyl phosphate or tributyl phosphate of Keppeler (column 8, lines 53-62) with the oligomeric, non-halogenated organophosphorus flame retardant material of Sicken or either of the applied Fearing patents would not result in a product corresponding to the product of representative claim 1.

Rather, appellants urge that there are so many choices of an additional flame retardant available to one of ordinary skill in the art disclosed by Keppeler, that one of ordinary skill in

the art would not find sufficient direction to have been led to the non-oligomeric, non-halogenated phosphate esters of Keppeler as an additive flame retardant for any of Sicken, Fearing '534 or Fearing '633. According to appellants, picking out any of the non-halogenated phosphate esters of Keppeler as an additive flame retardant for any of Sicken, Fearing '534 or Fearing '633 would be analogous to cracking the combination for a safe based on a listing of the numbers on the dial of a safe lock (reply brief, page 2, citing In re Luvisi, 144 USPQ 646, 650 (CCPA 1965)).

We do not agree with appellants' argument or analogy. While there must be some teaching, reason, suggestion, or motivation to add one of the non-halogenated phosphate ester flame retardants of Keppeler to the compositions of Sicken, Fearing '534 or Fearing '633 to result in the claimed product, it is not necessary that the cited references specifically suggest making that particular combination. Rather, the test for obviousness is what the combined teachings of the references would have suggested to one of ordinary skill in the art. See In re Young, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

Moreover, in evaluating such references it is proper to take into account not only the specific teachings of the references

but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

Here, we determine that there is ample motivation in the combined teachings of the references to have modified the product of Sicken, Fearing '534 or Fearing '633 to include another flame retardant comprising a non-oligomeric, non-halogenated phosphate ester as taught by Keppeler with a reasonable expectation of success in achieving a product corresponding to appellants' product. See In re O'Farrell, 853 F.2d 894, 903-904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988). This is so since it would have been well within the ordinary skill in the art to combine two well known flame retardants as explained by the examiner, each of which is taught by the prior art to be useful for the purpose of enhancing flame retardant properties of polyurethane foams, to form a mixture thereof to be used for the very same purpose and for achieving at least the additive effects of each. See In re Kerkhoven, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Furthermore, we again note that appellants have not disputed the examiner's finding that each of Sicken, Fearing '534 and Fearing suggest that further flame retardants may be employed in

combination with an oligomeric flame retardant. Moreover, Keppeler (column 8, lines 57-62) lists several alkyl-group containing phosphate esters among a small list (10) of exemplified additional unreactive flame proofing agents that may be used. Hence, a skilled artisan would have been led to use the alkyl-group containing phosphate esters of Keppeler in combination with the oligomeric flame retardant of the primary references where additional unreactive halogen-free flame proofing agents are desired in the polyurethane foam product.<sup>1</sup>

Consequently, we determine that the examiner has furnished a sufficient evidentiary basis to establish the obviousness, within the meaning of 35 U.S.C. § 103, of appellants' claims 1-3, 5-7, 9-11 and 13.

As for the examiner's separate § 103 rejection of claims 7, 8, 13 and 14 employing Hardy '042 or Hardy '035 in addition to the references applied in the above-discussed § 103 rejection,

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<sup>1</sup> We note that the teachings of Keppeler are not limited to the preferred liquid flame proofing agents mentioned at column 8, lines 7-11 of the patent as argued by appellants at pages 5 and 6 of the brief. Moreover, given that representative claim 1 employs open "containing" language, appellants' argument suggesting that one of ordinary skill in the art would be led to employ such a preferred liquid flame proofing agent does not establish why one of ordinary skill in the art would not also select an alkyl-group containing phosphate ester as taught by Keppeler and arrive at the claimed subject matter.

appellants do not separately argue each rejected claim. Consequently, we select claim 7 as the representative claim on which we shall decide this appeal as to that ground of rejection.

We also note that appellants argue that Hardy '042 or Hardy '035 do not cure the deficiencies of Sicken, Fearing '534 or Fearing '633, each further in view of Keppeler. However, for reasons as stated above, we do not agree with appellants' contentions that the combined teachings of Sicken, Fearing '534 or Fearing '633, each further in view of Keppeler are deficient. Consequently, that argument is not persuasive.<sup>2</sup>

We are mindful that one of the primary references (Sicken at column 2, lines 11-31) discusses one of the applied Hardy patents (U.S. Patent No. 4,458,035) and, at least in appellants' view, suggests disadvantages therewith. However, we are not persuaded by appellants' argument that such disclosure would have taught away from the herein claimed combination of flame retardants when the applied references are considered, in combination, for the reasons set forth above and in the answer. Appellants furnish no compelling rationale or evidence explaining how any alleged

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<sup>2</sup> Moreover, we note that the examiner's second § 103 rejection includes all of the references applied in the first § 103 rejection and appellants did not furnish arguments establishing that claim 7 should not stand or fall together with claim 1 with respect to the first ground of rejection.



disadvantage of Hardy '035 would have discouraged an ordinarily skilled artisan from following the particular combination of reference teachings that are directed to a different combination of phosphorous compounds. Nor do appellants explain how that argument would pertain to the combination of either of the applied Fearing patents with Keppeler and either of the applied Hardy patents.

Hence, for the reasons discussed above, we determine that the examiner has furnished a sufficient evidentiary basis to establish the obviousness, within the meaning of 35 U.S.C. § 103, of appellants' claims 7, 8, 13 and 14.

As a final point, we note that appellants have not based their argument on a showing of unexpected results.

Having reconsidered all of the evidence of record proffered by the examiner and appellants, we have determined that the evidence of obviousness, on balance, outweighs the evidence of nonobviousness. Hence, we conclude that the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art. Accordingly, we affirm the examiner's decision rejecting all of the claims on appeal under 35 U.S.C. § 103 over the applied prior art.

CONCLUSION

The decision of the examiner to reject claims 1-3, 5-7, 9-11 and 13 under 35 U.S.C. § 103 as being unpatentable over Sicken, Fearing '534 or Fearing '633, each further in view of Keppeler and to reject claims 7, 8, 13 and 14 under 35 U.S.C. § 103 as being unpatentable over Sicken, Fearing '534 or Fearing '633, each further in view of Keppeler and Hardy '042 or Hardy '035 is affirmed.

AFFIRMED

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RICHARD P. FENNELLY  
AKZO NOBEL INC  
INTELLECTURAL PROPERTY DEPARTMENT  
7 LIVINGSTONE AVENUE  
DOBBS FERRY, NY 10522-3408